_____
(Date)

MODEL STATEMENT OF WORK FOR REMEDIAL ACTION

_____ SITE, _____ COUNTY, _____ STATE

ATTACHMENTS

1. **To tell the contractor what EPA wants done.** The WAM/RPM should be as specific as possible in describing what you want the contractor to do. The contractor will write a work plan and budget describing how and at what cost the requirements will be met and ultimately will be responsible for performing to those requirements. Whenever there is an absolute requirement (e.g., prepare the QAPP in accordance with QAMS-005/80 (December 29, 1980 **or** prepare the Remedial Action Report in accordance with OSWER Publication 9355.0-39FS (June 1992)), state it.

2. **To give the contractor a structure for recording costs.** Work plan costs and final costs of different remedial action projects can be compared and analyzed.

Use of a Work Breakdown Structure (WBS)

1. A WBS has been developed for this model work assignment in order for EPA to track the initial and final costs of each element used and share this data with other Federal agencies. The WBS is, essentially, the outline for this work assignment and is included as Attachment 2 to this SOW.

2. If an element is not to be used, do not change the numbering system; instead, insert "not used" or "N/A" after the element number and then delete the text for that element.

3. For the items used for a given project, additional descriptions (e.g., type of samples and estimated number) should be added in order for the contractor and RPM/WAM to develop estimated costs on a common basis.

7.0 Introduction

.0.1 Site Description

Provide a brief site description and site history.

.0.2 Purpose

The purpose of this Statement of Work (SOW) is to set forth the framework and requirements for implementing the Remedial Action (RA) at _____ (site) in accordance with the objectives of the Remedial Design (RD). The Record of Decision (ROD) issued on _____ (date) defines the selected remedy. The RA is the implementation phase of site remediation or construction of the remedy, including

necessary operation and maintenance, performance monitoring, and special requirements. The RA is based on the RD to achieve the remediation goals specified in the ROD. The goal for completion of this RA is _____ months after work plan approval. The estimated completion date for this work assignment is _____.

For the purposes of this model SOW, the **RA contractor**, also referred to as "**the contractor**", is defined as the firm responsible for performing the SOW. The RA contractor is under contract to EPA through the Alternate Remedial Contracting Strategy (ARCS) or Remedial Action Contractor (RAC) contracting vehicles. The **construction contractor**, also referred to as the "**constructor**" is responsible for planning and managing the construction activities in accordance with the contract documents. In most cases, the constructor is a subcontractor to the RA contractor and will utilize the services of specialty subcontractors in order to accomplish the RA.

During the RA, there are many participating team members that will have specific roles and responsibilities throughout the RA. Up front in the SOW, the RPM may consider defining the nomenclature used to refer to the different participants. Defining the RA contractor, the construction contractor, and other subcontractors will ensure that the terms are used consistently throughout the SOW and Work Plan and will facilitate a clear understanding of whom is expected to do what parts of the SOW. The RPM may consider adding appropriate definitions to section 0.2.

.0.3 General Requirements

.0.3.1 The contractor shall conduct the RA in accordance with this SOW and the final plans and specifications developed during the RD. The RA shall also be consistent with the ROD issued on _____(date), the *Remedial Design/Remedial Action (RD/RA) Handbook* (U.S. EPA Office of Solid Waste and Emergency Response (OSWER) 9355.0-04B, EPA 540/R-95/059, June 1995), and all other guidance used by EPA in conducting an RA. The primary contact for this work assignment is _____, tel. (___)_____; the secondary contact is _____, tel. (___)_____.

.0.3.2 A summary of the major deliverables and a suggested schedule for submittals is attached. See Attachment 1.

.0.3.3 Specifically, the RA involves the construction and implementation of _____ (briefly explain the major components of the RA).

.0.3.4 The contractor shall furnish all necessary and appropriate personnel, including subcontractors, materials, and services needed for, or incidental to, performing and completing the RA.

.0.3.5 A list of primary guidance and reference material is attached. See Attachment 2. In all cases, the contractor shall use the most recently issued guidance.

.0.3.6 The estimated cost of the RA, as outlined in the RD cost estimate, is $_____.

.0.3.7 The contractor shall communicate at least weekly with the Work Assignment Manager or Remedial Project Manager (WAM/RPM), either in face-to-face meetings or through conference calls.

.0.3.8 The contractor shall notify the WAM/RPM when 75 percent of the approved work assignment budget has been expended and when 95 percent has been expended.

.0.3.9 The contractor shall document all decisions that are made in meetings and conversations with EPA. The contractor shall forward this documentation to the WAM/RPM within two working days of the meeting or conversation.

.0.3.10 EPA will provide oversight of contractor activities throughout the RA. EPA review and approval of deliverables is a tool to assist this process and to satisfy, in part, EPA's responsibility to provide effective protection of public health, welfare, and the environment. EPA will review deliverables, including specific deliverables from the constructor to the RA contractor, to assess the likelihood that the constructed remedy will

achieve its remediation goals and that its performance and operations requirements have been met. Acceptance of plans and design-required submittals (i.e., shop drawings, design details) by EPA does not relieve the RA contractor, the constructor, or any subcontractors from their professional responsibilities.

.0.4 Record-Keeping Requirements

The contractor shall maintain all technical and financial records for the RA in accordance with the contract. At the completion of the RA, the contractor shall submit _____ copies of the official record of the RA in _____ (format) to the WAM/RPM.

1. Technical and financial records must support decisions made during the RA as well as to support cost recovery.

2. The WAM/RPM should check with the Regional Records Manager and with Regional Counsel regarding the distribution, number of copies, and preferred format (i.e., hard copy, microfilm, microfiche, CD-ROM) for the official records of the RA.

.0.5 Equipment Transfer

At the completion of the RA work assignment or when government personal property is no longer required at the site, the contractor shall arrange for the proper disposition of government-furnished or contract-acquired property (purchased with contract funds) in accordance with the contract requirements. The disposition (transfer, sale, or abandonment) of government personal property and the tracking of such equipment (see item .1.2.4) shall be coordinated with the Contract Property Administrator. For additional information, refer to *Contractor's Guide for Control of Government Property*, Office of Administration and Resources Management, December 1988.

.0.6 Project Closeout

At the completion of the RA work assignment, the contractor shall perform all necessary project closeout activities as specified in the contract. These activities may include closing out any subcontracts, indexing and consolidating project records and files as required in Paragraph 0.4 above, and providing a technical and financial closeout report to EPA. Final costs shall be reported to EPA (on disk) broken down into the cost for each element of the WBS for this work assignment (see item .1.2.5, Project Management, Work Assignment Closeout).

7.1 Project Planning and Support

.1.1 Project Planning

The purpose of this task is to plan for the execution and overall management of this work assignment. The technical and managerial activities required to implement the RA and the associated costs are developed during the planning phase and are detailed in the RA Work Plan. Activities required for general work assignment management that will occur throughout the duration of the project are included in this task. This task may begin before or after the approval of the final design package and will continue through work assignment closeout. The following activities shall be performed as part of the project planning and support task:

1. Depending on project status and if the designer will continue as the RA contractor, the WAM/RPM may not need to task some of the following tasks (e.g. conduct site visit [1.1.2] or evaluate existing information [1.1.3]) that are needed to familiarize a new contractor with the site.

2. Before developing the RA SOW, the WAM/RPM should review the RD SOW or RD work plan to confirm if any RA planning or pre-construction activities were tasked during the RD work assignment. Some activities may have been conducted by the RD contractor in Task 12, Post RD Support)

3. In order to expedite the RA, initial planning for the RA may start before final approval of the design package and therefore, overlap with RD or post-RD activities tasked to the designer. This is possible when the designer will oversee the construction as the RA contractor.

.1.1.1 Attend Scoping Meeting. Before or concurrent with developing the RA Work Plan, the contractor shall attend a scoping meeting to be held at the EPA Regional Office.

The meeting location and the RPM's expectations for the number of contractor personnel to attend should be specified for cost estimation purposes. Consider having the designer, if different than the RA contractor, attend the meeting to present any special considerations and to facilitate the transfer of site and design information prior to work plan development.

.1.1.2 Conduct Site Visit. The contractor shall conduct a site visit with the EPA WAM/RPM and designer's representative (if appropriate) during the RA planning phase to assist in developing an understanding of the site and any construction logistics. Information gathered during the visit shall be used to better scope the project and to implement the RA. A Health and Safety Plan (HASP) is required for the site visit. The contractor shall prepare a report that documents the site visit and any required action items or decisions. This report shall be submitted to the EPA WAM/RPM within 10 calendar days of the site visit.

.1.1.3 Evaluate Existing Information. The contractor shall obtain, copy (if necessary), and evaluate existing data and documents, including the final Design Package, the RD Work Plan, the ROD, Remedial Investigation/Feasibility Study (RI/FS), and other data and documents as directed by WAM/RPM. This information shall be used to determine if any additional data are needed prior to procuring the constructor. The documents available for review are listed in Attachment 3.

The WAM/RPM should specify the following key documents for the RA contractor to review:

- Final Drawings and Specifications (100% Design)
- Final Basis of Design and Design Analysis
- RA Cost Estimate
- Construction Quality Assurance Plan
- Project Delivery Strategy
- VE Modifications
- Draft O&M Manual
- Quality Assurance Plan for O&M

Additional documents to list in Attachment 3 could include the summary of the "Predesign Information Collection" Effort (see Chapter 3 of the *Guidance for Scoping the Remedial Design*), Focused Feasibility Studies (FFS), State documentation, hydrogeological information, and RPM file data. However, to control expenses, limit review to pertinent documents specific to the site and construction of the remedy.

.1.1.4 Develop Work Plan. The contractor shall prepare and submit a RA Work Plan which includes a detailed description of construction activities, operations and maintenance, performance monitoring, and an overall management strategy for the RA. The contractor shall present the general approach that will be used for the RA at a Work Plan scoping meeting with the WAM/RPM. This meeting will be held at the Region _____ office.

If the RA will be complex, consider modifying subtask 3.1.1.4 (1) to include an additional scoping meeting to be held before the contractor finalizes the technical approach. This will ensure that the WAM/RPM and the contractor are in agreement as to the approach to be taken and that the agreed-upon approach is reflected in the Work Plan. The contractor may not have to rewrite the Work Plan if this is done.

.1.1.4 Develop Work Plan (continued)

(1) Develop Draft Work Plan. The contractor shall prepare and submit a draft RA Work Plan within 30 calendar days after initiation of the work assignment (WA). Submit the original to the Contracting Officer (CO), one copy to the Project Officer (PO), and one copy to the WAM/RPM or in accordance with contract requirements. The Work Plan shall include a detailed description of the technical approach for the remediation and construction activities in accordance with the final design and ROD. The necessary procedures, inspections, deliverables, and schedules shall be specified. A comprehensive construction management schedule for completion of each major activity and submittal shall also be included.

1. The WAM/RPM should verify the work plan submittal timeframe with the PO. Additional copies of the work plan can be submitted to the WAM/RPM, if specified, for distribution to other technical staff.

2. The WAM/RPM should ensure that the submittal requirements in this SOW are in accordance with the submittal requirements for the RA contract as specified in the plans and specifications.

3. The WAM/RPM must prepare an Independent Government Cost Estimate (IGCE) for the RA before the WA is issued to the contractor. The WAM/RPM should use the designer's final RA cost estimate, prepared as part of the final design (RD SOW, Task 11) as a starting point and add the costs associated with the construction management and oversight activities performed by the RA contractor, as specified in this SOW. Contact Regional IGCE Coordinators for assistance.

(a) Develop Narrative. Specifically, the Work Plan shall present the following:

- A statement of the problem(s) and potential problem(s) posed by the site and how the objectives of the completed RA will address the problem(s).
- The contractor's technical approach to each task to be performed, including a detailed description of each task; the assumptions used; the information needed for each task; any information to be produced during and at the conclusion of each task; and a description of the work products that will be submitted to EPA. Tasks and subtasks shall be presented in the same WBS format as provided in this work assignment SOW. The technical descriptions shall include enough detail to back up the costs and level of effort presented in .1.1.4(1)(b).
- A schedule for specific dates for completion of each required activity and submission of each deliverable required by this SOW. (See Attachment 1). This schedule shall also include information about timing, initiation, and completion of all critical path milestones for each activity and deliverable and the expected review time for EPA.

- An organizational structure which outlines the responsibilities and authority of all organizations and key personnel involved in the RA. A description of key project personnel's qualifications (project manager, resident engineer, quality assurance official, etc.) shall be provided.

(b) Develop Cost Estimate. The contractor's estimated cost to complete the work assignment, including subcontractors' costs, shall be prepared for each element of the WBS (Attachment 2) and submitted to EPA on disk [specify format]. The contractor shall provide a breakdown of the cost and Level of Effort (LOE), by professional levels, for each subtask of the Work Assignment.

(c) Internal QA and Submission of Work Plan.

(2) Prepare Final Work Plan

(a) Attend Negotiation Meeting. The contractor shall attend a Work Plan negotiation meeting at the Region _____ office. Any technical issues and possible solutions shall be discussed at this meeting. The contractor shall confirm these discussions and suggested plan of action in a memorandum to the WAM/RPM within 2 days of the meeting.

(b) Modify Draft Work Plan and Cost Estimate. The contractor shall make revisions to the Work Plan as a result of EPA's comments and/or negotiation agreements.

(c) Internal QA and Submission of Final Work Plan within 15 days after receipt of EPA comments on the draft Work Plan.

.1.2 Project Management

1. The WAM/RPM should specify the format for submissions (e.g., Monthly Progress Reports) if there are Region-specific or other requirements.

2. During construction, there may be especially active periods. The WAM/RPM should specify additional communication requirements or status reports from the RA contractor. Also, the WAM/RPM should arrange for personal visits to the site during these times.

.1.2.1 Prepare Periodic Status Reports. The contractor shall prepare Monthly Progress Reports.

(1) Document Cost and Performance Status. The contractor shall document the technical progress and status of each task in the WBS for the reporting period in accordance with contract requirements. The contractor shall report costs and level of effort (by P-level) for the reporting period as well as cumulative amounts expended to date.

(2) Prepare and Submit Invoices. Monthly invoices will be prepared and submitted in accordance with the level of detail as specified in the contract.

.1.2.2 Meeting Participation and Routine Communications. The contractor shall attend project meetings, provide documentation of meeting results, and shall contact the RPM by telephone on a weekly basis to report project status.

.1.2.3 Maintain Cost/Schedule Control System. The contractor shall develop and maintain a system to monitor and control the costs and schedule of the Work Assignment. The contractor shall specify the process to continuously update the information in the system as a result of engineering network analyses and changing field conditions. The system shall have the capability to compare technical progress with expenditures and predict completion dates and cost to complete information. In addition to reporting cost and progress of the elements of this SOW, the cost/schedule control system must report and control costs within Task 8, RA Implementation, in sufficient detail to control construction costs.

.1.2.4 Manage, Track, and Report Equipment Status. The contractor shall manage, track, and report the status of all government-furnished equipment and contract-acquired property in accordance with contract requirements. Labelling and record keeping requirements for government personal property are outlined in the *Contractor's Guide for Control of*

Government Property, Office of Administration and Resources Management, December 1988.

.1.2.5 Work Assignment Closeout. The contractor shall perform the necessary activities to closeout the work assignment in accordance with contract requirements.

.1.2.6 Coordinate with Local Emergency Response Teams. The contractor shall coordinate with local emergency responders to ensure the proper implementation of the HASP and specifically the Emergency Response Plan. The contractor shall review and complete the emergency responder agreement, if necessary, conduct a kickoff meeting at the site with all local emergency responders, and notify the responders of any changes to the Emergency Response Plan throughout the RA. [For more information, refer to *Emergency Responders Agreements for Fund-Lead Remedial Actions*, publication 9285.6-04FS, March 1994]

7.2 Community Relations

The contractor shall provide community relations support to EPA throughout the RA. The contractor shall provide community relations support in accordance with *Community Relations in Superfund: A Handbook*, June 1988. This task begins with the approval of the RA Work Plan and continues throughout the duration of the work assignment. Community relations shall include the following subtasks:

1. Listed below are a number of possible community relations activities the WAM/RPM may require, depending on the specific situation. Refer to the *Community Relations in Superfund: A Handbook, Chapter 7 and Appendix A*, for suggested community relations activities during RA.

2. With implementation of the remedy, site activity increases and so does the likelihood of community concerns and questions. In addition to the community relations activities listed below in the WBS, the WAM/RPM may consider the following activities to communicate progress during construction: arranging site tours and workshops; establishing observation decks; and videotaping cleanup activities. These activities may be tasked in items .2.3.1. Technical Support, or added to the WBS under as a separate item and numbered accordingly (i.e., .2.3.5). The WAM/RPM should plan for and develop a proactive and effective program with the assistance of the Regional Community Relations Specialist.

3. The WAM/RPM should review the current community relations plan, if one exists, and direct the RA contractor to update the existing CRP to address activities and concerns specific to the RA.

4. The WAM/RPM should specify the format for Community Relations submissions (e.g., fact sheets, news releases) if there are Region-specific or other requirements.

.2.1 Develop Community Relations Plan (CRP)

.2.1.1 Conduct Community Interviews. The contractor shall assist the WAM/RPM in conducting community interviews to identify community concerns associated with the RA. The contractor shall assist the WAM/RPM in identifying key community members, establishing an interview schedule, conducting interviews, and summarizing the results.

.2.1.2 Prepare the CRP. The contractor shall update the existing CRP to address community relations requirements and community concerns during the RA.

(1) Draft CRP. The contractor shall update the CRP and submit a draft version within 14 days after completion of the community interviews.

(2) Final CRP. Within 7 days of receipt of EPA comments, the contractor shall submit a final CRP.

.2.2 Prepare Fact Sheets

1. This subtask may have been completed during the RD. In that case, the WAM/RPM may task the RA contractor to revise the fact sheet before construction begins with the current schedule, expected conditions, and relevant points of contact.

2. Depending on the complexity of the RA, the WAM/RPM should consider communicating construction progress by sending out regular fact sheets. Specify to the contractor the anticipated number of fact sheets, topics, and number of copies required.

The contractor shall assist the WAM/RPM in preparing a fact sheet that informs the public about activities related to the final design, the schedule for the RA, activities to be expected during construction, measures to be taken to protect the community, provisions for responding to emergency releases and spills, and any potential inconveniences such as excess traffic and noise that may affect the community during the RA.

.2.3 Public Meetings and Availability Support

The number and location of anticipated public meetings should be identified in the SOW for cost estimation purposes. Similarly, the RPM should specify the number of contractor personnel expected to be in attendance at the public meetings.

.2.3.1 Technical Support. The contractor shall assist the WAM/RPM in providing technical support for community meetings that may be held during the RA. This support may include preparing technical input to news releases, briefing materials, arranging other community relations vehicles (i.e., site tours), and helping the WAM/RPM to coordinate with local agencies.

.2.3.2 Logistical and Presentation Support. The contractor shall assist the WAM/RPM in preparing technical briefing materials and in arranging for the logistical details for the meeting(s).

.2.3.3 Public Notice Support. The contractor shall assist the WAM/RPM in drafting public notices, announcing the public meetings and placing the notice in a local paper of general circulation.

.2.4 Maintain Information Repository and Mailing Lists

The contractor shall assist the WAM/RPM in developing or revising site mailing lists and maintaining a repository of information on activities related to the site-specific remedial action as described in Appendix A.8, page A-19, of *Community Relations in Superfund: A Handbook*, June 1988.

7.3 Site Specific Plans

The purpose of this task is to review the existing site-specific plans that were prepared during RD, and update, as necessary, for the RA contractor to implement the RA. Typical plans include a health and safety plan, sampling and analysis plan, and construction quality assurance plan. This task begins with approval of the RA Work Plan and will occur throughout the duration of the work assignment. The RA contractor has the overall responsibility to prepare, update, and/or maintain the necessary site-specific plans for implementation of the RA. Since the constructor and any subcontractors will prepare their own RA plans, the RA contractor will incorporate the plans and procedures received from any subcontractors into the overall site plans. Construction plans and procedures are living documents and the contractor shall update the appropriate plans, as necessary, throughout the RA.

1. The RPM/WAM should check to see if the update and/or preparation of RA site specific plans were tasked during the RD (Task 12, Post Remedial Design Support).

2. The RA Contractor is tasked in this section to update any necessary plans for RA implementation. It should be noted that the Constructor and any subcontractors will prepare their own plans. The WAM/RPM should budget for the RA contractor to modify site plans to incorporate plans and procedures received from any subcontractors and to account for changing field conditions.

3. Typical sampling and analysis activities by the RA contractor include confirmatory sampling (i.e., take split samples with the constructor) to ensure cleanup standards have been met; air sampling and analysis to monitor air quality around the site perimeter; and wastewater discharge sampling to monitor National Pollutant Discharge Elimination System (NPDES) requirements.

.3.1 Update Site Management Plan. After EPA approval of the RA Work Plan (see Item 3.1.1.4), the contractor shall update the Site Management Plan (SMP) that was prepared during RD. This plan provides EPA with a written understanding of how access, security, health and safety, contingency procedures, management responsibilities, and waste disposal are to be handled during construction. The contractor shall update the plan, as necessary, to incorporate any subcontractors' plans.

.3.1.1 Update Health and Safety Plan. Prepare a site-specific HASP that addresses overall health and safety considerations for all personnel onsite. The contractor shall incorporate the constructor's and any subcontractors' HASPs into the overall site plan. The RA contractor shall provide the overall framework for site safety and ensure that adequate warning systems and notifications are understood by all parties. The HASP shall specify employee training, protective equipment, medical surveillance requirements, standard operating procedures, and a contingency plan in accordance with [40 CFR 300.150 of the NCP and] 29 CFR 1910.120 1(1) and (1)(2). Whenever possible, refer to the HASP developed for the RI/FS or RD when preparing the HASP for the RA. For any site visits, a task-specific HASP must also be prepared to address health and safety requirements.

.3.1.2 Update Sampling and Analysis Plan (Chemical Data Acquisition Plan). Prepare a sampling and analysis plan to reflect the specific objectives of any data acquisition conducted during construction. The SAP will outline the data collection and quality assurance requirements of any sampling and analysis conducted by the contractor.

(1) Quality Assurance Project Plan. The contractor shall prepare a Quality Assurance Project Plan (QAPP) in accordance with EPA QA/R-5 (latest draft or revision). The QAPP shall describe the project objectives and organization, functional activities, and quality assurance/quality control (QA/QC) protocols that shall be used to achieve the desired data quality objectives (DQOs). The DQOs shall, at a minimum, reflect use of analytical methods for identifying contamination and addressing contamination consistent with the levels for remedial action objectives identified in the National Contingency Plan. The QAPP developed for the RD and/or RI/FS should be referenced or adapted whenever possible when preparing the QAPP for the RA.

(2) Field Sampling Plan. Prepare a Field Sampling Plan (FSP) that defines the sampling and data collection methods that shall be used for the project. The FSP shall include sampling objectives; sample locations and frequency; sampling equipment and procedures; sample handling and analysis; and a breakdown of samples to be analyzed through the Contract Lab Program (CLP) and through other sources, as well as the justification for those decisions. The FSP shall consider the use of all existing data and shall justify the need for additional data whenever existing data will meet the same objective. The FSP shall be written so that a field sampling team unfamiliar with the site would be able to gather the samples and field information required. The FSP developed for the RD and/or RI/FS must be referenced or adapted whenever possible;

the contractor shall document any required changes to the FSP in a memorandum to the WAM/RPM.

1. The Sampling and Analysis Plan (SAP) may be optional during certain RAs. It is prepared and updated from the SAP prepared during RD if the RA contractor has sampling and analysis responsibilities outside of those required of the constructor. In most cases, the RA contractor will split samples with the constructor to confirm and validate cleanup actions. These samples will be analyzed through the CLP (Level 4 data are required).

2. The WAM/RPM should reduce time and costs by using an onsite laboratory to analyze routine samples as construction proceeds (i.e., to delineate excavation limits) rather than going through the CLP. This is usually the constructor's responsibility and is included in the contract documents.

3. The WAM/RPM may consider requesting a plan for acquiring permits throughout the construction process. This plan could be part of the Construction Management Plan, and may avoid timely and costly construction delays.

4. The WAM/RPM should identify whether audits will be performed and specify contractor response items.

.3.1.2 Update Sampling and Analysis Plan (continued)

(3) Data Management Plan. Prepare a Data Management Plan that outlines the procedures for storing, handling, accessing, and securing data collected during the RA.

(4) Develop Other Plan(s)

.3.2 Update Pollution Control & Mitigation Plan. Prepare a Pollution Control & Mitigation Plan that outlines the process, procedures, and safeguards that will be used to ensure contaminants or pollutants are not released off-site during the implementation of the RA. Any plans and procedures prepared during the RD should be referenced or adapted whenever possible (i.e, sediment and erosion control plan and air monitoring plan).

.3.2.1 Update Transportation & Disposal Plan (Waste Management Plan). Prepare a Transportation & Disposal Plan that outlines how wastes that are encountered during the RA will be managed and disposed of. The contractor shall specify the procedures that will be followed when wastes will be transported off-site for storage, treatment, and/or disposal.

.3.3 Update Construction Quality Assurance (CQA) Plan. The contractor shall review and update the final Construction Quality Assurance (CQA) Plan as submitted as part of the final design documents. The CQA Plan shall outline the necessary steps to inspect and sample construction materials (i.e., membranes, concrete) and to ensure the overall quality of the constructed project. The CQA Plan shall be in accordance with "Construction Quality Assurance for Hazardous Waste Land Disposal Facilities" (EPA, October, 1986) and will include the following elements:

- Responsibility and authority of all organization and key personnel involved in the remediation action construction.
- CQA Personnel Qualifications. The contractor shall establish the minimum qualifications of the CQA Officer and supporting inspection personnel.
- Inspection Activities. The contractor shall establish the observations and tests that will be required to monitor the construction and/or installation of the components of the RA(s). The plan shall include the scope and frequency of each type of inspection to be conducted. Inspections shall be required to verify compliance with environmental requirements and include, but not be limited to, air quality and emissions monitoring records, waste disposal records (e.g., RCRA transportation manifests), etc. Inspections shall also ensure compliance with all health and safety procedures.

- Sampling requirements. The contractor shall establish the requirements for sampling activities, sample size, sample locations, frequency of testing, criteria for acceptance and rejection, and plans for correcting problems as addressed in the project specifications.
- Documentation. The contractor shall describe the reporting requirements for CQA activities. This shall include such items as daily summary reports and inspection data sheets.

7.4 Procurement of Subcontract

The purpose of this task is to solicit, evaluate, select, and award the necessary subcontracts to construct and implement the RA. This task begins with the approval of the RA Work Plan and review and modification of the contract documents prepared during the RD. After advertising and evaluating bids, this task ends with the award of one or more construction contracts to implement the RA. The contractor shall perform the following procurement activities:

1. The prebid and preaward activities may have been tasked to the RD contractor during Task 12, Post Remedial Design Support. The RA contractor will need to update the general conditions and dates prior to printing and distribution.

2. The WAM/RPM should consider having a project meeting with the RA contractor early in this task to review procedures and schedules for evaluating bids. It is important for the WAM/RPM to be involved during this process to ensure that the Contracting Officer's requirements for consent are met. This will help ensure that construction proceeds on schedule.

3. The WAM/RPM's role during this task is to oversee the technical information that is provided to bidders, monitor the overall procurement process and schedule, review written questions and responses, and attend any prebid and preconstruction conferences.

4. In an Invitation for Bid (IFB) or low bid procurement, the successful bidder is referred to as the lowest responsible bidder (offeror). If a request for cost and technical proposal (RFP) is used instead of the IFB, the procurement process and associated terminology for successful bidders are different (i.e., proposals in the competitive range versus lowest responsible bidder). The WAM/RPM should refer to the *Remedial Design/Remedial Action (RD/RA) Handbook* (U.S. EPA Office of Solid Waste and Emergency Response (OSWER) 9355.0-04B, EPA 540/R-95/059, June 1995) for more information on the different types of procurement.

.4.1 Prebid (Pre-Solicitation) Activities

.4.1.1 Printing & Distribution of Contract Documents. Print and distribute to prospective bidders the contract documents that were finalized during RD.

.4.1.2 Advertising/Soliciting of Bids. Advertise and solicit bids for construction services. An advertisement shall be prepared and published in _____.

(1) Prebid (pre-solicitation) Meetings. The contractor shall arrange and attend prebid meetings to provide clarification on plans, specifications, and contract documents to all bidders.

(2) Resolution of Inquiries/Issuing Addenda. The contractor shall resolve bidder inquires and document all contact with potential bidders, and issue amendments to contract documents if additional information becomes available that all bidders should be made aware of after solicitation.

(3) On-site Visits. The contractor shall participate in onsite visits that may be required to further clarify the services required.

.4.1.3 Readvertise/Resolicit Bids, if necessary. The contractor shall readvertise and resolicit bids in accordance with the Federal Acquisition Regulations (FAR) requirements.

.4.2 PreAward Activities

.4.2.1 Receipt of Bids (offers). After receipt of all bids within the solicitation period, the contractor shall perform the necessary activities to review, compile, and evaluate all bids received. The contractor shall conduct any necessary reference checks to ensure qualifications of responsible bidders.

(1) Determination of Responsive, Responsible Bidders (offerors) or proposals in the competitive range.
(2) Perform Reference Checks
(3) Bid (offer) Tabulation
(4) Bid (offer) Analysis

.4.2.2 Receipt of Follow-up Items from Responsible Bidder(s) (offerors). The contractor shall request the necessary follow-up items (i.e., subcontracting plan), from the responsible bidder(s), if the follow-up items are evaluated as part of the selection criteria.

.4.2.3 Review of Equal Employment Opportunities (EEO), MBE Requirements, Small Disadvantaged Business (SDB) Subcontracting Plans. The contractor shall review the bidder(s) plans to ensure that the successful bidder meets the requirements set forth in the bidding documents.

.4.2.4 Request for Consent from EPA. After a comprehensive review of the lowest responsible bidder's submittals, the contractor shall request EPA's consent to award.

.4.3 Post Award Activities

.4.3.1 Attend Post Award Meetings/Preconstruction Conference. The contractor shall arrange and conduct the necessary post award meetings with the successful bidder, including the preconstruction conference. The purpose of the preconstruction meeting(s) is to develop common goals, lines of communication, and construction-specific procedures. The contractor shall prepare a meeting agenda, invite key personnel, and prepare minutes of the meeting.

.4.3.2 Review Permits, Insurance, Bonds. The contractor shall review the successful bidder's permit plan, insurance coverage, warranties, and bond to minimize site risks and potential financial damages.

.4.3.3 Review and Approve RA Subcontractor's Schedule. The contractor shall review the successful bidder's schedule and evaluate that schedule in regards to the overall project schedule.

.4.3.4 Review and Approve RA Subcontractor's Measurement and Payment Schedule

.4.3.5 Review RA Subcontractor's Submittals - Issue Notice to Proceed (NTP)

.4.3.6 Review Revisions/Addendum of RA Subcontractor's Submittals

7.5 Subcontract Management Support

The purpose of this task is to provide management and oversight of the subcontractor(s) responsible for remedial construction. This task begins with the RA contractor issuing a Notice to Proceed to the constructor and ends with the completion of the RA and final payment to the constructor. The contractor shall institute procedures, monitor progress, and maintain systems and records to ensure that the work proceeds according to requirements specified in the contract documents. The contractor shall perform the following subtasks:

1. EPA is required to perform technical and cost analyses for any changes to the construction contracts. Refer to ARCS Construction Contract Modification Procedures, OSWER Directive 9355.5001/FS, September 1989

2. The WAM/RPM may specify EPA review of any non-conformance reports to assess the status of construction activities.

3. The WAM/RPM should evaluate if value engineering support is required (see items .5.4.2 and .6.3.2) and then consult with the Project Officer or Contracting Officer for the latest guidance regarding value engineering proposals under the RAC contracts.

.5.1 Financial Management.

.5.1.1 Review/Approve Invoices. The contractor shall promptly review and approve progress payments as determined prior to construction in the Measurement and Payment Schedule (see item .4.3.4).

.5.1.2 Review/Approve Subcontract Modifications. The contractor shall promptly review any necessary subcontract modifications, confer with the WAM/RPM, and approve appropriate changes.

.5.1.3 Maintain Tracking Systems. The contractor shall maintain the necessary tracking systems to monitor quality of work, resource requirements, and cost and schedule status.
(1) Construction Codes of Accounts
(2) Work Breakdown Structure (WBS)
(3) Schedule (CPM, PERT)

.5.2 Cost Monitoring.

.5.2.1 Weekly/Monthly Tracking

.5.2.2 Analyze Progress Payments. The contractor shall monitor costs of the constructor and all subcontractor(s) in relation to the status of construction or percentage of work completed. The contractor shall track and project progress payments to ensure the overall financial progress of the RA.

.5.2.3 Monitor RA Subcontractor for Compliance with Davis-Bacon Act

.5.3 Engineering Support

.5.3.1 Review Field Logs. On a weekly basis, the contractor's design team shall review field logs that document the daily activities and inspections. The contractor shall provide recommendations to improve site operations and inspections, if required.

.5.3.2 Periodic Attendance at Meetings. At the subcontractor's request, the RA contractor shall attend any construction-related meetings to provide design clarification and technical support.

.5.4 Engineering Support Option

.5.4.1 Review Field Change Requests. The contractor's design team shall review any changes to the construction documents and specifications due to actual field conditions and submit to EPA for review and approval.

.5.4.2 Review VE Proposals. The contractor shall review any VE proposal submitted by the RA subcontractor.

.5.4.3 Review Non-Conformance Reports

.5.4.4 Review Re-Design Proposals

7.6 Detailed Resident Inspection (Resident Engineer)

This task includes the field supervision and documentation of the RA constructor's work as it proceeds onsite. The task begins with the constructor's mobilization to the site and ends with the final inspection. The contractor will provide the necessary personnel to observe the constructor's daily activities, procedures, and inspections on behalf of EPA.

1. The WAM/RPM must carefully review the design package to assure coordination and compatibility of Resident Engineer's inspection activities with construction contract documents.

2. The WAM/RPM should specify the expected written and/or photographic documentation to be recorded in the field.

3. The WAM/RPM should specify the required frequency and distribution for any field activity reports (RPM, State representative, etc.).

.6.1 Attend Periodic Meetings. The contractor shall attend any meetings, at the request of the constructor, to provide clarification on contract documents and specifications.

.6.2 Provide Field Presence and Oversight. The contractor shall provide a Resident Engineer to observe and document the daily field activities of the constructor. Specific subtasks may include:

- .6.2.1 Maintain Field Logs and Daily Diaries
- .6.2.2 Interpret Subcontract Documents
- .6.2.3 Develop Sketches Reflecting Field Conditions
- .6.2.4 Review Submitted Construction Drawings
- .6.2.5 Prepare Reports on Inspections
- .6.2.6 Monitor, Update, and Report Construction Progress
- .6.2.7 Review/Recommend Time Extensions
- .6.2.8 Coordinate with Home Office/Management Support
- .6.2.9 Perform Davis-Bacon Act Inspections
- .6.2.10 Conduct Final Inspection
  - (1) Conduct Site Walkover
  - (2) Prepare Draft Final Inspection Report
  - (3) Respond to Comments
  - (4) Prepare Final Inspection Report

.6.3 Provide Engineering Support to Design Team

- .6.3.1 Recommend Actions on Health and Safety Considerations
- .6.3.2 Provide Support on VE Proposals.
- .6.3.3 Review/Recommend Design Changes
- .6.3.4 Provide Support on Change Order Requests. The Resident Engineer shall assist in the evaluation and processing of change order requests.
- .6.3.5 Provide Support in Claims Resolution. The Resident Engineer shall maintain records to support the resolution of any claims filed by the constructor.
- .6.3.6 Provide Support for Construction Schedule Changes

.6.4 Perform Field Testing. The contractor shall provide the necessary personnel and equipment to collect any confirmatory samples, perform any necessary field testing, and conduct inspections of work.

.6.5 Monitor Quality Assurance/Quality Control Procedures

7.7 Cleanup Validation

The purpose of this task is for the RA contractor to perform confirmatory sampling of any data collected by the constructor during construction and to verify that final cleanup levels or standards, as specified in the ROD,

have been achieved. This task may also include regular confirmatory testing of materials used during construction to determine if they are consistent with the requirements of the construction contract documents (i.e., soils testing, materials testing, chemical or biochemical testing of water). Analyses of confirmatory samples, validation of data, and evaluation of results are included in this task. This task may begin during the early stages of construction, continue throughout construction, and end with the final inspection to ensure cleanup levels have been met.

1. The Work Breakdown Structure for field investigations, sampling, and analyses presented below was compiled for all phases of a remedial project from Remedial Investigation through final construction of the remedy. The detailed list is included to preserve the WBS. The WAM/RPM should specify in the SOW only the investigations that are required for RA.

2. Confirmatory sampling is usually quite focused and limited depending on the site and remedy-specific conditions. The WAM/RPM, in conference with the Technical Review Team, should determine the level of confirmatory sampling and specify the number of samples so both the contractor and the WAM/RPM can develop accurate cost estimates. The actual numbers may be refined upon negotiation with the contractor.

3. The cleanup validation activities may serve as the basis for site delisting and therefore, it is critical that the data quality objectives defined in the RA Work Plan and Sampling and Analysis Plan are met. In order to document construction procedures and results, which are defensible, Contract Laboratory Program data (level 4) are required.

.7.1 Mobilization/Demobilization

.7.1.1 Mobilize. The contractor shall acquire all necessary equipment, supplies, and personnel to set up onsite operations for confirmatory sampling and analyses.

.7.1.2 Demobilize. The contractor shall dismantle and pack up all equipment associated with the confirmatory sampling activities.

.7.2 Field Investigation

.7.2.1 Conduct Geological Investigations (Soils/Sediments)

(1) Surface Soil Sample Collection
(2) Subsurface Soil Sample Collection
(3) Soil Boring/Permeability Sampling
(4) Sediments Sample Collection
(5) Soil Gas Survey
(6) Test Pit.

.7.2.2 Conduct Air Investigations

(1) Sample collection
(2) Air Monitoring Station

.7.2.3 Conduct Hydrogeological Investigations: Groundwater

(1) Well Systems Installation
    (A) Accomplish Mobilization
    (B) Develop Wells
    (C) Conduct Downhole Geophysics
    (D) Install Monitoring Wells
    (E) Install Test Wells
    (F) Install Gas Wells.
(2) Collect Samples
(3) Collect Samples during Drilling (e.g. Hydro Punch or equivalent)
(4) Conduct Tidal Influence Study
(5) Perform Hydraulic Tests (pump tests)
(6) Measure Groundwater Elevation

.7.2.4 Conduct Hydrogeological Investigations: Surface Water

(1) Collect Samples
(2) Study Tidal Influence
(3) Measure Surface Water Elevation

.7.2.5 Conduct Waste Investigation
(1) Collect Samples (Gas, Liquid, Solid)
(2) Dispose of Derived Waste (Gas, Liquid, Solid)

.7.2.6 Conduct Geophysical Investigation
(1) Surface Geophysical Activity
(2) Magnetometer
(3) Electromagnetics
(4) Ground Penetrating Radar
(5) Seismic Refraction
(6) Resistivity
(7) Site Meteorology
(8) Cone Penetrometer Survey
(9) Remote Sensor Survey
(10) Radiological Investigation

.7.2.7 Conduct Ecological Investigation
(1) Wetland and Habitat Delineation
(2) Wildlife Observations
(3) Community Characterization
(4) Identification of Endangered Species
(5) Biota Sampling and Population Studies

.7.2.8 Collect Contaminated Building Samples.

.7.2.9 Dispose of Investigation-Derived Waste. Characterize and dispose of investigation-derived wastes in accordance with local, State, and Federal regulations as specified in the FSP and the Waste Management Plan (For more information, refer to the Fact Sheet entitled, *Guide to Management of Investigation-Derived Wastes*, 9345.3-03FS [January 1992]).

.7.3 Sample Analysis

1. Analyses of soil and sediment samples (physical properties), surface and ground water samples, waste samples, discharge samples, and air samples are the most likely types of confirmatory samples taken during RA. However, additional analyses are presented below to preserve the WBS and to provide the WAM/RPM consideration with a comprehensive listing for consideration.

2. The WAM/RPM should consider adding a subtask for onsite laboratory analysis, if required. The constructor will usually provide this service through the construction contract and there may be no reason for the contractor to provide an independent onsite laboratory.

3. For cleanup validation and to ensure that the cleanup standards have been met, CLP analyses are more likely to be performed than screening analyses. Some screening analyses in combination with CLP may be required as construction proceeds. The WAM/RPM should specify the types of sample analyses required at specific milestones during construction.

.7.3.1 Screening Type Laboratory Sample Analysis. The contractor shall arrange for and conduct the appropriate combination of screening analytical tests for any materials and/or confirmatory samples taken at the site:

(1) Analyze Air and Gas Samples
(A) Organic

(B) Inorganic
(C) Radiochemistry
(2) Analyze Ground Water Samples
(A) Organic
(B) Inorganic
(C) Radiochemistry
(3) Analyze Surface Water Samples
(A) Organic
(B) Inorganic
(C) Radiochemistry
(4) Analyze Soil and Sediment Samples
(A) Organic
(B) Inorganic
(C) Radiochemistry
(5) Analyze Waste (Gas) Samples
(A) Organic
(B) Inorganic
(C) Radiochemistry
(6) Analyze Waste (Liquid) Samples
(A) Organic
(B) Inorganic
(C) Radiochemistry
(7) Analyze Waste (Solid) Samples
(A) Organic
(B) Inorganic
(C) Radiochemistry
(8) Analyze Biota Samples
(A) Organic
(B) Inorganic
(C) Radiochemistry
(9) Analyze Bioassay Samples
(10) Perform Bioaccumulation Studies

.7.3.2 CLP Type Laboratory Sample Analysis. The contractor shall arrange for and conduct the appropriate combination of CLP analytical tests for any materials and/or confirmatory samples taken at the site:

(1) Analyze Air and Gas Samples
(A) Organic
(B) Inorganic
(C) Radiochemistry
(2) Analyze Ground Water Samples
(A) Organic
(B) Inorganic
(C) Radiochemistry
(3) Analyze Surface Water Samples
(A) Organic
(B) Inorganic
(C) Radiochemistry
(4) Analyze Soil and Sediment Samples
(A) Organic
(B) Inorganic
(C) Radiochemistry
(5) Analyze Waste (Gas) Samples
(A) Organic

(B) Inorganic
(C) Radiochemistry
(6) Analyze Waste (Liquid) Samples
(A) Organic
(B) Inorganic
(C) Radiochemistry
(7) Analyze Waste (Solid) Samples
(A) Organic
(B) Inorganic
(C) Radiochemistry
(8) Analyze Biota Samples
(A) Organic
(B) Inorganic
(C) Radiochemistry
(9) Analyze Bioassay Samples
(10) Perform Bioaccumulation Studies

.7.4 Analytical Support and Data Validation

1. For RA, full data validation procedures are usually not necessary. The WAM/RPM may specify the level of data validation required.

2. The WAM/RPM should specify the format for submissions if there are Region-specific or other requirements.

.7.4.1 Prepare and Ship Environmental Samples. The contractor shall ensure the proper management of samples in the field and arrange for shipment to the designated laboratory. Accurate chain-of-custody procedures for sample tracking, protective sample packing techniques, and proper sample-preservation techniques will be used.
(1) Ground Water Samples
(2) Surface and Subsurface Soil Samples
(3) Surface Water and Sediment Samples
(4) Air Samples
(5) Biota Samples
(6) Other Types of Media Sampling and Screening
.7.4.2 Coordinate with Appropriate Sample Management Personnel
.7.4.3 Implement EPA-Approved Laboratory QA Program.
.7.4.4 Provide Sample Management (Chain of Custody, Sample Retention, and Data Storage)
.7.4.5 Perform Data Validation. The contractor shall validate appropriate data to ensure that the confirmatory data are accurate and defensible.
(1) Review Analysis Results against Validation Criteria
(2) Provide Written Documentation of Validation Efforts

.7.5 Data Evaluation

1. The WAM/RPM should specify the format for submissions if there are Region-specific or other requirements.

2. The WAM/RPM should require the contractor to prepare and submit a Technical Memorandum to the WAM/RPM summarizing the quality of data, preliminary results of evaluation, and if significant data problems are identified early in the evaluation.

.7.5.1 Data Useability Evaluation/Field QA/AC

.7.5.2 Data Reduction, Tabulation, and Evaluation. The contractor shall evaluate, interpret, and tabulate data in an appropriate presentation format for final data tables. The contractor shall design and set up an appropriate database for pertinent information collected that will be used to validate the RA.

(1) Evaluate Geological Data (Soils and Sediments)
(2) Evaluate Air Data
(3) Evaluate Hydrogeological Data: Ground Water
(4) Evaluate Hydrogeological Data: Surface Water
(5) Evaluate Waste Data
(6) Evaluate Geophysical Data
(7) Evaluate Ecological Data

.7.5.3 Modeling. The contractor shall perform limited and focused computer modeling of data (i.e., air monitoring data) to facilitate data evaluation and interpretation.

(1) Contaminant Fate and Transport
(2) Water Quality
(3) Ground Water
(4) Air
(5) Other Modeling

.7.5.4 Develop Data Evaluation/Cleanup Status Report. Evaluate and present the sampling and analytical results in a summary report and submit to the WAM/RPM for review and approval. The report will assess the progress of the RA based on these results and identify any actions required. After the WAM/RPM's review, the contractor shall attend a meeting with EPA to discuss data evaluation results and next steps.

7.8 Remedial Action Implementation (Subpool Activities)

The purpose of this task is to provide the contractor with a structure for recording the activities performed and costs incurred by the constructor and any subcontractors during RA implementation. A funding reserve is allocated in this task to account for unforeseen site conditions and associated adjustments (i.e., change orders.

> The use of MCACES Gold for construction cost estimates and the USACE WBS will provide consistency for construction cost estimates so that costs for similar RAs can be compared.

.8.1 Remedial Action Subcontract Cost. The contractor shall monitor and track the costs associated with the constructor's implementation of the remedy.

.8.2 Remedial Action Reserve (15% of Remedial Action Subcontract). The contractor shall monitor and track the reserve in relation to any approved change orders and notify the WAM/RPM when 75% of the reserve has been expended.

7.9 Project Performance (Operation and Maintenance [O&M])

The purpose of this task is to perform the activities necessary to protect the integrity of the remedy and to evaluate system performance. This task begins during the later stages of construction with the revision of the O&M manual and ends with submittal of final technical memoranda summarizing project performance.

> The services provided here must be integrated with design document requirements. Design decisions will dictate the level of effort required of the RA contractor versus the constructor.

.9.1 Operation and Maintenance (O&M)

.9.1.1 Review O&M Manual. The contractor shall review and update the O&M Manual, as necessary, to include as-built drawings and equipment data sheets. The revised manual shall be submitted to the WAM/RPM 30 days prior to the start of operation.
(1) Describe/Analyze Potential Operating Problems
(2) Review Conformity to Applicable Performance and Operations Requirements

.9.1.2 Ensure Adequate Training for O&M Staff. The contractor shall support all necessary training of the O&M staff, including State personnel and contractors.

.9.1.3 Develop Corrective Action Plans. The contractor shall identify any potential system failures and develop corrective action plans, if necessary.

.9.1.4 Review Records/Reporting Requirements

.9.1.5 Review Laboratory Procedures

.9.1.6 Review Process Systems

.9.1.7 Review Safety and Emergency Systems. The contractor shall perform the necessary reviews of safety and emergency systems

.9.1.8 Review Warranty Information and Files

.9.2 System Performance

.9.2.1 Evaluate Equipment including operating parameters and performance. At a minimum, the performance data to be collected shall be as needed to satisfy the requirements for preparing the Cost and Performance Reports required under Section 7.9.3

.9.2.2 Performance Tests Oversight. The contractor shall oversee any performance tests conducted by the constructor and document procedures and results.

.9.2.3 Gather and Test Samples (see task 7 for details).

.9.3 Report Project Performance

.9.3.1 The contractor shall prepare a technical memorandum to summarize the system's performance and required O&M procedures. The contractor also shall prepare a Cost and Performance Report in accordance with the guidance document entitled Guide to Documenting Cost and Performance for Remediation Projects, Publication EPA-542-B-95-002, March 1995. The report shall summarize the performance data collected under section .9.2.1 as well as project costs. The Draft Technical Memoranda and Draft Cost and Performance Report shall be submitted to the WAM/RPM 30 days prior to the final inspection.

.9.3.2 Respond to Comments

.9.3.3 The contractor shall respond to any comments from EPA and prepare the Final Technical Memoranda and Cost and Performance Report within 10 days of receipt of comments.

7.10 Project Completion and Close Out

The purpose of the project completion and close-out activities is for the RA contractor to conduct the necessary inspections to verify completed work, make final payments, close out subcontracts, and prepare a Remedial Action Report.

1. The RPM/WAM should identify when government accepts transfer of the constructed facilities at the completion of the work assignment.

2. It is important for the WAM/RPM to consider the nature of any site improvements that will be funded with Superfund monies. Often reasonable activities that restore the physical appearance of the site and result in the long-term effectiveness of the remedy are included in the construction contract (i.e., road improvements). If not, the WAM/RPM may task the RA contractor to complete these activities.

.10.1 Demobilization

.10.1.1 Removal of Temporary facilities. The contractor shall dismantle, pack up, and move off-site any temporary facilities (i.e., trailers) or equipment used during the course of the RA.

.10.1.2 Site Restoration. At the direction of the WAM/RPM, the contractor shall conduct reasonable activities that restore the physical appearance of the site (i.e., road restoration, fence removal, limited landscaping).

.10.1.3 Termination of Engineering Support Activities.

.10.2 Pre-final/Final Activities

.10.2.1 Make pre-final/final inspection. The contractor shall conduct the prefinal inspection with the constructor and develop a punch list of deficiencies. The contractor shall prepare and submit a prefinal inspection report which includes the list of deficiencies, completion dates for outstanding items, and the date for a final inspection.

.10.2.2 Make Lockout Inspection. The contractor shall arrange for the final lockout inspection and determine if all terms of the contract have been satisfied.

.10.3 Final Payment/Punch List

.10.3.1 As-built resolution/certification

.10.3.2 Trial Period Oversight

.10.4 Remedial Action Report

.10.4.1 Prepare draft Remedial Action Report. The contractor shall prepare and submit to the WAM/RPM the Remedial Action Report, in accordance with the fact sheet entitled, *Remedial Action Report, Documentation for Operable Unit Completion*, Publication 9355.0-39FS, June 1992. The report shall summarize RA events, performance standards and construction quality control, construction activities, final inspection, certification that the remedy is operational and functional, O&M, and RA costs.

.10.4.2 Respond to Comments

.10.4.3 Prepare/Issue Final Remedial Action Report. After receipt of EPA comments, the contractor shall prepare and submit the final Remedial Action Report to the WAM/RPM.

7.11 Work Assignment Closeout

.11.1 Return Documents to Government

.11.2 Duplicate, Distribute, and Store Files

.11.3 Archive Files

.11.4 Prepare Microfiche, Microfilm, and Optical Disk

.11.5 Prepare Closeout Report. The contractor shall include a breakdown on disk of final costs and level of effort (by P-level) in the same detail and format as the Work Breakdown Structure (Attachment 2).